

# Department of the Army - UPH Furnishings Program

## SPECIFICATIONS (Revised 6/29/99)

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### 1. GENERAL

- a. Warranty: All items, including case goods, tables, and chairs, shall carry a minimum three-year standard commercial warranty against product defect or poor workmanship. All other items shall carry a standard commercial warranty. The manufacturer will repair or replace all items found defective at no cost to the government.
- b. Certification: All manufacture's shall certify in writing that all furnishings and equipment meets the warranty requirements stated above, and the specifications provided in sections 2 through 4 below.
- c. Style: Furniture shall have simple lines and detailing that is durable and easily maintained, and shall be free of ornamentation. All furnishings specified herein shall be of a design, material, and workmanship to withstand heavy daily usage over an extended life with a minimum of maintenance and repair. All case goods (including tables) should be similar in appearance and construction and all of the seating pieces should be compatible with the case goods.
- d. Quality: All pieces of furniture shall be new, free from defects affecting safety, appearance, durability, and serviceability, and in conformance with the specifications. All items shall be "first" quality goods. Factory "seconds" will not be accepted. All exposed wood surfaces shall be free of splices, loose knots, torn grains, checks, or defects of any kind. Furniture will be designed and detailed to achieve a high quality appearance. For example, tongue and groove connection between a solid wood edge piece and the remainder of the top panel shall not be visible from the side of the cabinet. Adjacent parts in any piece of furniture shall be closely matched in wood species, color and grain pattern. Examples include, but are not limited to, the following: both doors in a Drop-Lid Desk shall be similar in appearance; table pedestal and prongs shall be similar in appearance; and adjacent wood pieces in a chair base shall be similar in appearance.
- e. Regulatory Requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580, as amended, to the maximum extent practicable.
- f. Formaldehyde Emission Requirements. All plywood and plastic laminated panels bonded with urea formaldehyde or melamine formaldehyde adhesive shall meet the formaldehyde emission requirements in voluntary Standard ANSI/HPVA HP-1-1994 with the changes listed below.

Under paragraph 3.12, Formaldehyde Emission Requirements, product categories, change "Wall Paneling-Plywood" to Furniture panels, 6.5 mm thick or less, such as plywood drawer bottoms."

Change "industrial panels" to "furniture Panels greater than 6.5 mm, such as drawer sides/back, end panels, top panels, etc."

Loading Ratios and Maximum Emission Levels for these two categories remain the same.



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#### 2. CASE GOODS

a. All items shall meet or exceed the appropriate sections of ANSI/BIFMA X5.5-1989. Construction types: U. S. Army Installations will be given the following choices regarding the construction of the case goods. Requests for quotes will be based on the construction type chosen. The types are provided below with Types A and C1 being the standards.

1. Type A: "Oak Veneer on minimum of Hardwood Veneer-core Plywood"
2. Type B: "Solid Oak"
3. Type C: "Dry Construction"
  - a. Type C1: Oak Veneer on Hardwood Veneer-core Plywood with metal to metal connectors.
  - b. Type C2: Solid Oak with screws.

Within each of these construction types are 2 options that affect the construction and aesthetics of the piece of furniture. The options are provided below with Option 1 being the standard.

1. Option 1: No face frame. Drawer fronts and doors may extend the full width of the cabinet or may be recessed between side panels. Front edges of side panels will be visible and must be banded as described below
2. Option 2: Solid wood face frame. An approximately 35 mm (1 1/2") wide solid wood face frame will be provided. Doors and drawer fronts will be recessed flush with the face frame. Front edges of side panels will not be visible.

In addition, three finish options are allowed:

1. Natural Oak
2. Light Oak
3. Medium Oak

Other options may be required for each piece of furniture. These options are provided below.

b. Fabrication: All case goods shall be constructed in accordance with AWI 400, premium grade, unless otherwise specified. No fiberboard, particleboard, or hardboard shall be used in any part of the furniture or in any plywood component unless specifically noted. Exterior surfaces and exposed interior surfaces shall be solid oak or oak veneer, #1 grade per AWI 100-S. All framing materials shall be solid hardwood.

All joints must be stronger than the substrate itself and must resist racking and withstand loading.

Lamination shall consist of planks no less than 19 mm (3/4") or more than 100 mm (4") in width.

Adhesives shall conform to ASTM D-905 average block shear strength of not less than 19 300 kPa (2800 lbs per square inch) when tested. Other fabrication requirements follow:

1. Side Panels:
  - a. Type A or C1 construction (Veneer on Hardwood Veneer-Core Plywood): Side panels shall be minimum 19 mm (3/4") 5-ply hardwood veneer-core plywood with oak veneer. Exposed edges on the front of the piece shall be provided with minimum 10 mm (3/8") thick solid oak edge banding or may be covered by solid oak front frame. Back edges of side panels, if exposed, shall be finished for appearance, as the backs of some of these units may be exposed to view. Top edges of side panels, if exposed, shall be finished smooth, and sealed, for cleaning. Bottom edges of side panels shall be sealed to eliminate the possibility of water wicking up the side panels when floors are mopped. As a minimum, side panels that will be visible, such as in wardrobes, drop-lid desks, one-drawer nightstands, etc., shall be finished on both faces to match other panels.



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- b. Type B or C2 construction (Solid Oak): Side panels shall be minimum 19 mm (3/4") solid oak. All exposed edges shall be finished. As a minimum, side panels that will be visible, such as in wardrobes, drop-lid desks, one-drawer nightstands, etc., shall be finished on both faces to match other panels.
2. Door and drop-lids: Construction shall be one of the following options. Solid wood doors and drop lids are not allowed. These options are applicable for all construction types.
  - a. Minimum 19 mm (3/4") 5-ply hardwood veneer-core plywood. If the door or drop lid is recessed flush with the edges of the side panels or face frame, provide veneer edge banding on all 4 sides. If the door or drop lid is on the face of the cabinet, so that the hinged-edge of the door is readily accessible and susceptible to damage, provide a minimum 10 mm (3/8") thick solid oak internal edge banding on the hinged-edge of the door. Other edges to have minimum of veneer edge banding.
  - b. Minimum 19 mm (3/4") plywood with 20 kg (45 lb.) Medium Density Fiberboard (MDF) as the core material, internally banded with solid oak around the perimeter. Oak banding shall be minimum of 10 mm (3/8") for all doors except Computer Desks, TV Armoires, and Wardrobes which shall have a minimum of 13 mm (1/2") solid oak banding. The banding, along with the oak veneer or plastic laminate, shall completely seal the door so that moisture can not penetrate into the MDF. Backer boards may not be used on doors or drop-lids. If laminate is provided on one side of the drop lid and veneer is provided on the other, the manufacturer must ensure that the ply construction of the drop lid is "balanced". Requirements for hinges, provided below, remain unchanged for this type of door construction.
3. Back Panels: For all construction types, standard back panels shall be minimum 10 mm (3/8") hardwood finished oak veneer plywood for pieces of furniture where the back panel is not a structural element (to resist racking, etc.). If the back panel is a structural element, it shall be minimum 5-ply hardwood finished oak veneer plywood, 19 mm (3/4") thick. Back panels that will be visible, such as in wardrobes, drop-lid desks, one-drawer nightstands, etc., shall be finished on both faces to match other panels. All exposed panel edges must be finished as specified above for side panels, including all bottom edges to eliminate the possibility of water penetration and wicking through the core material.
4. Other Panels: Headboard and footboard panels shall be minimum of 13 mm (1/2").
5. Drawers: Drawer depth shall be within 50 mm (2") of cabinet depth. For all construction types, drawer fronts shall be minimum 19 mm (3/4") solid wood. Drawer sides and backs shall be minimum 11 mm (7/16") solid hardwood or all hardwood veneer-core plywood with no voids and shall have a sealed lacquer finish. Edges shall be finished smooth. The use of recycled material for drawer sides, back, and bottom may be considered based on test results for durability, screw holding, burning characteristics, maintenance, and appearance. Height of drawer sides and backs shall be within 25 mm (1") of the parting rail. Drawer width shall be within 25 mm (1") of opening. All drawers shall be provided with replaceable drawer fronts. Drawer construction and materials, to include drawer bottoms, shall be able to withstand a load of 125% of the rated load of the drawer guides without sagging or failing. All drawer joints shall be glued. At a minimum, drawer bottoms shall be perimeter glued and vertically supported by routed grooves.
6. Tops: For all construction types the following options may be provided for tops. The top surfaces on nightstands, bachelor chests, and other pieces 1200 mm (48") or less in height; horizontal surfaces of interior compartments on the Drop-Lid Desk, TV Armoire, Microwave Stand, etc.; and all writing surfaces, shall be plastic laminate in accordance with paragraph 2.c.



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- a. All tops may be minimum of 19 mm (3/4") hardwood plywood. All exposed edges must be finished with minimum 10 mm (3/8") thick solid oak edge banding or may be covered by solid oak front frame. Tops shall not overhang more than 13 mm (1/2") on any side.
- b. Laminated tops only may have minimum overall thickness of 19 mm (3/4") 42 - 48 pcf particleboard or 20 kg (45 lb.) MDF core. Core must be provided with a minimum 19 mm (3/4") hardwood lumber band on all 4 sides. The top must be completely sealed from moisture by use of the laminate, the lumber band, and a backer sheet. The top may not be relied on for structural integrity. In other words, the top alone can not be providing resistance to racking. In addition, the top must be able to handle moving of the furniture that will be accomplished by lifting the piece by the top. Consideration should be given to connecting the side and back panels to the top in the lumber band. This may be accomplished through blocking located behind the panels, or by a metal angle that allows the top to be connected to the other panels closer to the edges of the top. In addition, the glue line between the lumber band and the core material should be supported. If the glue line is unsupported and/or the top is not attached in the lumber band, an extended warranty should be considered as warranty term will be a determining factor in the durability of the piece. The front of the cabinet must be provided with a horizontal hardwood rail attached to the top. If the rail is exposed, it shall be solid oak. Tops shall not overhang more than 15 mm (1/2") on any side. If the standard top construction is particleboard or MDF, an option should be made available for a hardwood plywood top to meet specific requirements at certain Army installations. Other core materials may be considered provided test results are provided that clearly illustrate that the proposed material has a better screw holding capacity, absorbs less moisture, and provides as good of a surface for attaching the laminate as the particleboard or MDF.
7. Internal construction: Interior framing shall be minimum of front and back hardwood rails at every drawer level. Rails, at a minimum, shall be joined by mortise and tenon or half-lap joint and screwed to side panels. Additional attachment to the side panels is required if solid oak is not used. Frame rails shall be minimum of 38 mm (1 1/2") x 19 mm (3/4") thick. The base and top shall be screwed to the interior framing of the cabinet. All cabinets shall have reinforcing corner blocks screwed, as a minimum, into the corner of the base. Screw cleats shall be added where necessary. Dry construction methods utilizing metal to metal fasteners, where the panels are structural and self-supporting, do not require rails or corner blocks.
8. Dust shields: The option for dust shields should be provided on schedule. If this option is selected, dust shields will be provided in the bottom of all units with drawers. Dust shield shall be minimum 5 mm (3/16") thick. Materials other than plywood may be used for the dust shields.
9. Shelves: Adjustable shelves may either be oak veneer on hardwood plywood or may be plastic laminate on hardwood plywood. Both faces of shelves must be finished the same to allow for flipping of shelves in case of warpage. Minimum of front and back edges must be edge banded with solid oak or oak veneer.
- c. Materials and finishes: All wood shall be kiln-dried to a moisture content of 5-8%. Wood color to be manufacturer standard natural or light to medium oak. The furniture finish shall be a multicoat formulation as per AWI 1500, system 1 or 7, premium grade, for woods with a filled finish. Laminates shall be matte-finish, high-pressure plastic laminate, HGS series per AWI 200-G-5. Laminate color shall match the wood species and color.



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d. Hardware: Provide all hardware and accessories, as required for each item. Hardware shall comply with applicable standards of ANSI/BHMA A156.9, Grade 1. All exposed metal hardware shall be brass plated; the finish shall complement the wood finish. All concealed hardware shall be finished to complement adjacent surfaces. Typical hardware items include, but are not limited to, the following:

1. Catches: Double roller or magnetic.
2. Drawer Guides and Keyboard Shelf Guides: Side mounted with 34 kg (75 lb.) capacity guides for drawers less than 0.06 m<sup>3</sup> (2.0 cu. ft.). Drawers between 0.06 and 0.11 m<sup>3</sup> (2.0 and 4.0 cu. ft.), and keyboard shelves, shall be provided with 45 kg (100 lb.) capacity guides. Drawers greater than 0.11 m<sup>3</sup> (4.0 cu. ft.) shall be provided with 68 kg (150 lb.) capacity guides. Guides shall be provided with positive out and in stops.
3. Leveling Glides: Non-skid rust-free steel with nylon leveling glides. Glides shall be adjustable, easily accessible, and provided on all four corners of items more than 900 mm (36 inches) high. All other pieces shall be provided with screw-in nylon glides.
4. Hasp and Scuff Plate: When required by the item description, lock hasps will be provided on both doors and will be notched into door edge. Lock hasps shall be screwed to back of doors with only the eyelet exposed. Through-door single hasps will not be provided. Provide screw-mounted brass scuff plates around eyelets on exposed side of doors. Some provision shall be made to reduce the potential for damage to side panels resulting from hasps striking the panels when the doors are opened.
5. Shelf Supports: Four adjustable metal push or screw-in with cushioned tabs per shelf.
6. Lid Supports: All metal, adjustable tension flap with brake. Each support shall be provided with at least 2 bolt through fasteners at each end.
7. Drawer and Door Pulls: Pulls shall not protrude beyond front edge of cabinet.

Exception: Wooden pulls may protrude only if they cannot be easily sheared off and will not preclude the hasp and scuff plate configuration as specified above. Two pulls shall be provided for drawers 760 mm (30") wide or wider. Options for drawer and door pulls are provided below. Types P1 and P2 will be the most common.

- a. Type P1: Recessed steel with polished brass plated pull, similar in styling to the UNICOR Patriot or Trio line.
  - b. Type P2: Semi-recessed wood pull. This pull is an insert placed into the drawer front or door.
  - c. Type P3: Full-length groove. This is a "concealed" type of pull that allows you to open the drawer or door by means of a groove or lip that runs the full length of the door or drawer.
  - d. Type P4: Routed wood pull. This pull is routed directly into the drawer front or door.
8. Door Hinges: Semi-concealed or butt hinges, brass plated, with minimum of 4 through-door bolt fasteners per hinge (2 per hinge leaf). Hinges shall be minimum of 5-knuckle, 2.29 mm (0.090 inch) thick (heavy-duty), 70 mm (2 3/4") long. "European-style" hinges shall not be provided. Hinges shall provide a 270-degree opening angle. Hinges shall not protrude past the sides of the cabinet. If fasteners are exposed when door or drop-lid is closed, security fasteners must be provided. Hinges on the drop lid must be fastened into the lumber band if MDF is used.
  9. Power cords: Where outlets are specified, the power cord shall be of sufficient length to extend vertically from outlets, where mounted in cabinet, through grommet, to the floor, and then extend horizontally a minimum of 1200 mm (4 feet). Outlets shall be placed within the cabinet for ease of use, and within a distance that does not exceed the standard length of appliance power cord.



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10. Grommets: Holes in the back panels shall be provided as indicated in the item descriptions. Holes are to be sanded and finished in a manner to give the back of the case a finished appearance. Nylon grommets with covers may be provided if desired. If grommets with covers are to be provided in lieu of sanding and finishing the holes, they shall be heavy duty and attached to the back panel to ensure that they are not easily removable, but yet not permanently attached so they can be replaced if damaged.

e. Item Descriptions: The following items are required as a minimum, within the dimensions noted, to support the Unaccompanied Personnel Housing Furniture and Furnishings Program for the Department of the Army.

#### 2.1. Nightstand

- a. Description: Single free-standing unit, 450 - 560 mm (18" - 22")W x 400 - 510 mm (16" - 20")D x 500 - 610 mm (20" - 24")H, with number of drawers as specified.
- b. Hardware: Includes 1 pull per drawer, glides, and drawer guides.
- c. Options: 1 drawer or 2 drawer.

#### 2.2. Drop-Lid Desk

- a. Description: Single free-standing wall unit, 680 - 820 mm (27" - 32")W x 480 - 610 mm (19 - 24")D x 1820 - 1990 mm (72" - 78")H. Drop-lid desk shall have three full-width drawers, a drop-lid writing surface, built-in tasklight, minimum duplex surge protected outlets, and one adjustable shelf behind upper doors. The drop-lid shall be recessed a minimum of 75 mm (3") into the case to provide added support when open. The recessed amount may be reduced to 37 mm (1 1/2") provided additional measures are taken to support the drop-lid when pressure is applied when the drop-lid is open. These additional measures must be identified. The drop-lid compartment shall be equipped with a fluorescent light fixture, meeting or exceeding UL 153. The light fixture shall be mounted underneath the fixed shelf and concealed behind a rail. At least one 38 mm (1-1/2") grommet shall be located in the back panel behind the upper doors, and at least one 38 mm (1-1/2") grommet shall be located at the desk surface.
- b. Hardware: Includes catches, drawer guides, leveling glides, shelf supports, drawer and door pulls, hinges and power cords. In addition, the upper doors shall be attached with a minimum of two pairs of hinges. Each door shall have pull and catches. Drawers shall have pulls and guides. The drop-lid shall be attached with a heavy duty all metal screw-mounted flush continuous hinge. There shall be no exposed hardware on the writing surface, to include exposed screw heads for the pull. A lid support shall be fastened to each side of the drop-lid in accordance with 2.d.6. Magnetic catches shall be provided at both top corners to keep lid in closed position. Metal plates on the writing surface shall be as small and unobtrusive as possible, and shall not cause an interference in the writing area.
- c. Options: With hasp locks and brass plates or without hasps and plates.

#### 2.3. TV Armoire

- a. Description: Single free-standing wall unit, 810 - 920 mm (32" - 36")W x 550 - 660 mm (22" - 26")D x 1340 - 1990 mm (53" - 78")H. Unit shall have three full-width drawers and an inside open area behind doors/in open area that is adequate to accommodate a 27" television. Shelf to accommodate VCR will be provided. Minimum duplex surge protected outlets shall also be provided. At least one 38 mm (1-1/2") grommet shall be provided in the open area.
- b. Hardware: Includes catches, drawer guides, leveling glides, shelf supports, drawer and door pulls, door hinges, and power cord. In addition, the upper doors shall be attached with a minimum of two pairs of hinges. Each door shall have pull and catches. Drawers shall have pulls and guides.



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c. Options:

1. With hasp locks and brass plates or without hasps and plates.
2. With three full-width drawers or with adjustable shelves behind lower doors for stereo equipment or other storage.

2.4. Wardrobe Unit

a. Description: Single free-standing wall unit, 910 - 1070 mm (36" - 42")W x 610 - 660 mm (24" - 26")D x 1820 - 2140 mm (72" - 84")H. Unit shall have two doors and one fixed shelf. The fixed shelf shall be above the clothing rod and behind a door. A 38 mm (1-1/2") diameter wood or aluminum clothing rod shall be provided. Provide one mirror minimum 400 mm (16") x 600 mm (24") attached to the inside of one door.

b. Hardware: Includes catches, leveling glides, door pulls, and hinges. Wardrobe doors shall be attached with a minimum of three pair of hinges. Each door shall have pull and catches.

c. Options:

1. With hasp locks and brass plates, with a three point locking mechanism on the door handle with a mechanism capable of padlocking the unit, or without any type of locking capability.
2. With or without internal 3-drawer chest.

2.5. Upper Storage Unit

a. Description: Single free-standing unit, which is designed to fit above wardrobe. Width and depth of this unit shall be the same as the wardrobe. Unit shall be 910 - 1070 mm (36" - 42")W x 610 - 660 mm (24" - 26")D x 300 - 410 mm (12" - 16")H. This upper storage unit can be an integral part of a wardrobe unit, but must be accessed by a separate door(s) and the overall unit must be at least 200 mm (8") taller than the standard wardrobe.

b. Hardware: Includes door pulls, hinges, and catches. In addition, the unit shall be attached to the wardrobe by concealed fasteners. If a top hinged door is provided, in lieu of 2 side hinged doors, locking hinges shall be provided to keep door in open position.

2.6. Bachelor Chest

a. Description: Single free-standing unit, 710 - 850 mm (28" - 33")W x 450 - 560 mm (18" - 22")D x 660 - 770 mm (26 - 30")H. Unit shall have three drawers.

b. Hardware: Includes drawer guides, glides, and drawer pulls.

2.6A. Small Bachelor Chest

a. Description: Single free-standing unit, 450 - 560 mm (28" - 33")W x 450 - 560 mm (18" - 22")D x 660 - 770 mm (26 - 30")H. Unit shall have three drawers.

b. Hardware: Includes drawer guides, glides, and drawer pulls.

2.7. Single Bed, Stackable

a. Description: Single bunkable bed to accommodate 965 mm (38")W x 2032 mm (80") L mattress, 970 - 1070 mm (38" - 42")W x 2100 - 2160 mm (83" - 85")L with 880 - 990 mm (35" - 39")H headboard and 550 - 660 mm (22" - 26")H footboard. Bed unit shall consist of a headboard, footboard, fascia rails, and wedge-lock sagless spring unit.

b. Materials and finishes: The carriage bolts used for attaching the wedge-lock spring unit's brackets to the posts and the fascia to the side rails shall have bronze finished heads. Wedge-lock spring unit and bed frame shall have a baked enamel finish. All hardware shall be finished to resist corrosion. Tool-less bunk



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beds may be provided as long as they are provided with metal to metal connectors and meet or exceed all test results for traditional bunk bed construction. The requirements of paragraph 2.7.d. below may be modified as appropriate for this type of bed.

c. Hardware: The wedge-lock sagless spring unit shall be constructed from four pieces of 50 mm (2") x 35 mm (1-3/8") x 4 mm (5/32") minimum angle iron. The 50 mm (2") flange side shall be vertical and turned down. The side rails' horizontal flanges shall overlay the end rails' horizontal flanges and be securely riveted or wire-welded at the corners. Each corner shall be braced with a diagonal cross-strap at least 25 mm (1")W x 3 mm (1/8") thick securely riveted or wire-welded to the end and side angles. The unit shall have a minimum of 16, 9 1/2 gauge sagless springs with a minimum of 5 evenly spaced connecting links between each spring. The springs shall be attached to each flange with a minimum of 5, 12 gauge tight-wound helicals. An 11 gauge steel locking bracket shall be riveted or wire-welded to each corner of the unit, and attached to each headboard and footboard post with carriage bolts, nuts and locking washers. A center stretcher of 25 mm (1") round 16 gauge steel tubing with flattened ends shall be riveted or wire-welded to the side rails. The tubing shall be bowed through the middle to allow spring deflection.

d. Fabrication: Headboard and footboard rails shall be secured to the end posts with glue and double or triple doweled. Wood dowels shall be multi-grooved and kiln-dried to a moisture content of 5% or less. End posts shall be drilled to receive connector pins for stacking beds. The spring unit shall be attached to the headboard and footboard with wedge-lock brackets. A wood fascia between the headboard and footboard shall be of a dimension to conceal the spring unit and shall be of solid oak, minimum 16 mm (5/8") thick, fastened to the rails in a minimum of 3 locations. Plywood and lumber-core are not acceptable for the fascia.

e. Testing: Two beds in a bunk bed configuration shall meet or exceed the following test requirements. Tests may be performed in any sequence; however, all tests shall be performed on only one bunk bed unit of the type offered. All tests shall be performed without a mattress unless otherwise specified. A separate headboard may be used for the Joint test.

(1) Roller deflection test. Bed shall be bunked and the top bunk unit shall be tested. A 455 mm diameter by 610 mm long cylinder, filled with water to a total mass of 100 kg, shall be placed across the springs/platform, and rolled along the length of the bed spring/platform (see figure 1). The cylinder shall be centered across the width of the bed. The bed spring shall be attached to the head and the foot board. In the event that the head and footboard prohibit testing because of lack of room on the testing equipment, the top of the head and footboard may be removed.

The rolling motion shall start from one end of the bed and roll to the other end for 25,000 cycles. One cycle is completed by rolling the cylinder from one end of the spring/platform to the other and then rolling it back to the starting point. Upon removal of the test cylinder, the crown in the arc of the spring strands shall not have changed by +/- 13 mm. The connecting links may be replaced as necessary during the test. Failure of the test shall be cause for rejection. When a bed platform is tested, any failure, loosening of joints or distortion after testing that would affect safety or serviceability shall be cause for rejection.

(2) Static force test. Bed shall be bunked and the top bunk unit shall be tested. The test mass shall be 272 kg, 455 mm x 1065 mm x 785 mm high. The test mass shall be placed on the top bunk, midway between the bed ends (figure 3) so that the 1065 mm dimension is positioned across the bed side rails/structure. At the center of the top bunk unit, the deflection of the side rails/structure shall not be more than 14.5 mm with the test mass in place. After removal of the test mass, the side rails/structure shall not have set more than 1.5 mm and shall show no visible distortion. Failure of the test shall be cause for rejection.



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(3) End impact force test. Bed shall be bunked and the top bunk unit shall be tested. Place bed assembly (top and bottom bunked unit) on a smooth wood or concrete floor. Remove any adjustable glides. Block the bed assembly at the head and foot with 38 mm H x 1100 mm L x min. 3 mm thick steel angle securely attached to the floor. Securely attach 600 mm W x 280 mm H x 19 mm thick pieces of plywood shielding to the head and foot of the bed so that bottom edge of the shield is even with the bottom edge of the bed side rail/structure below the mattress. Shield height may be increased to span to the next higher rail. In no case shall the shields be positioned so that they add support or rigidity to the bed assembly (such as by covering the joints between the top and bottom bunk units or the joints between the posts and the cross rails). Cover plywood shields with 600 mm W x 280 mm H x 1.90 mm thick sheet steel.

Preparation of test apparatus. Suspend two round, 45.5 kg each, steel masses with chains, 2620 mm above the point of impact. Position one mass and chain at each end of the bed. At rest, with the chains perpendicular to the floor, one mass shall touch the shield at the head and one mass shall touch the shield at the foot of the bed. These masses shall be located at the center (side to side) of the shield, 140 mm above the bottom edge of the shield.

Test procedure. Pull one mass out a distance of 1100 mm from its rest position and release so that the mass swings freely and impacts the shield on the end of the bed assembly. Repeat this procedure for the mass at the other end of the bed. Repeat this procedure so that alternate impacts are made on the bed assembly. Each mass shall strike the bed 25 times, 50 impacts total.

Acceptance criteria. Carefully inspect the entire bed assembly for damage. Bed components and parts shall not be loose, bent or damaged in any way. Headboard shall remain securely attached. Bunk beds shall remain securely joined together. Drawers (when present) shall continue to operate smoothly and quietly. Any distortion, cracked weld joints, loose fasteners/connectors, loose wood joints etc. will be cause for rejection.

(4) Top impact test. Bed shall be bunked and the top bunk unit, with 150-160 mm thick mattress in place, shall be tested. Securely wrap a bundle of 875 mm (+/- 2 mm) long steel rods together to make up a 100 kg mass. Suspend this mass 1220 mm above the bed unit. Position the long axis of the mass parallel to both the long dimension and the horizontal surface of the bed. Center the mass over the upper bed unit. Release the mass and allow it to free-fall onto the bed unit. Repeat this procedure for a total of four impacts.

Acceptance criteria. Carefully inspect the entire bed assembly for damage. Bed components and parts shall not be loose, bent or damaged in any way. Headboard shall remain securely attached. Bunk beds shall remain securely joined together. Any distortion, cracked weld joints, loose fasteners/connectors, loose wood joints etc. will be cause for rejection.

(5) Joint test. Suspend headboard from one top corner so the opposite bottom corner is 300 mm above a concrete floor. Release headboard and allow it to free-fall to the floor. Repeat this test, suspending the headboard from the other top corner. After testing, carefully inspect the headboard. Any broken, loose or open joints shall be cause for rejection.



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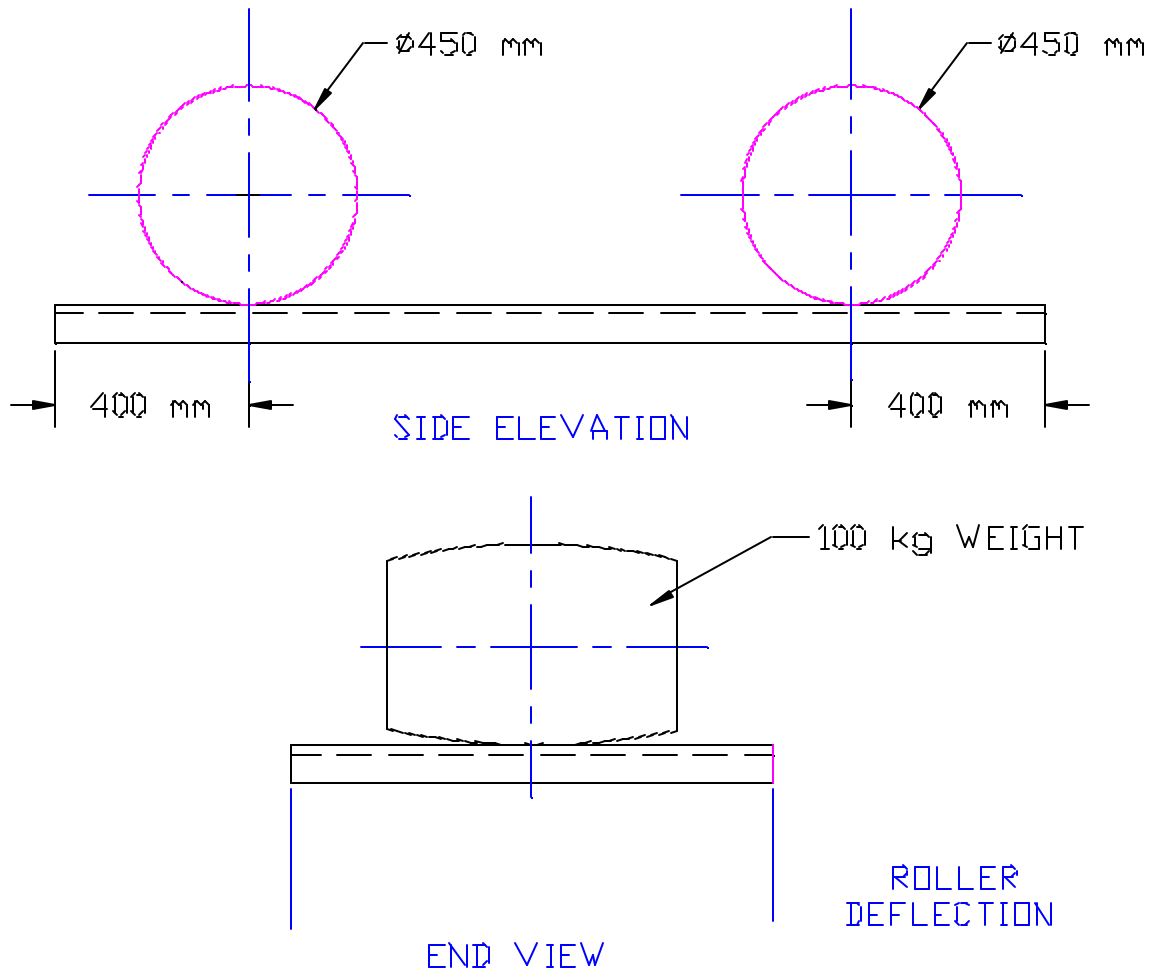


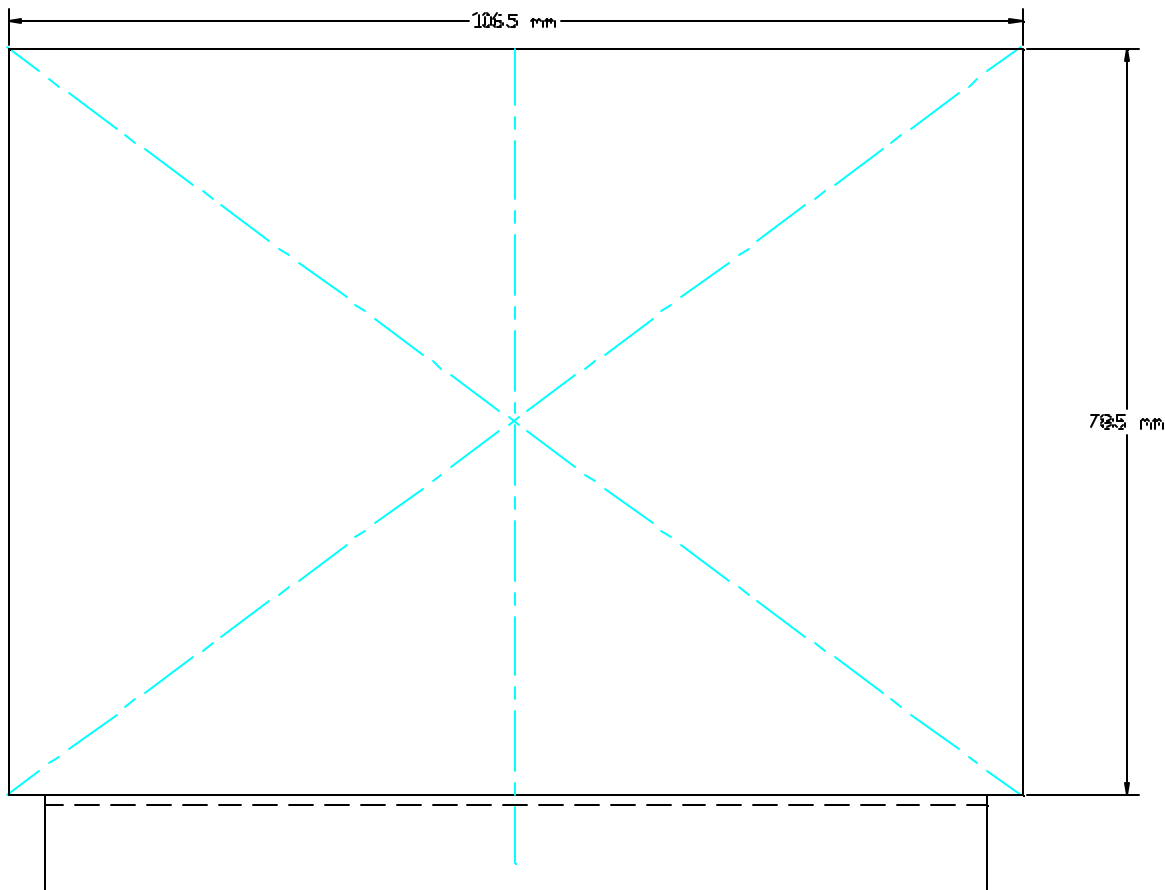
FIGURE 1

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STATIC LOAD

SIDE ELEVATION

FIGURE 3

#### 2.8. Chest

- Description: Single free-standing unit, 760 - 910 mm (30" - 36")W x 450 - 510 (18" - 20")D x 1070 - 1270 mm (42" - 50")H.
- Hardware: Includes drawer guides, leveling glides, and drawer pulls.
- Options: Available with 5 or 6 drawers.

#### 2.9. Computer Desk

- Description: Single free-standing wall unit, 810 - 920 mm (32 - 36")W x 550 - 660 mm (22" - 26")D x 1820 - 1990 mm (72" - 78")H, with three full-width drawers, minimum of one adjustable shelf and pull-out tray for keyboard/writing behind upper doors, and minimum duplex surge protected outlets. The compartment to also contain one removable shelf above the pull-out tray for the monitor to accommodate a keyboard and mouse or the CPU below the shelf. Width of keyboard tray should be able to accommodate keyboard and mouse pad. Extensions to the keyboard tray may be provided if required. The adjustable shelf shall provide capability for paper feed and placement of cables. Adequate number,



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size, and placement of grommets with covers is required to allow for wiring of different computer components.

b. Hardware: Includes catches, drawer guides, leveling glides, shelf supports, drawer and door pulls, hinges and power cords. The upper doors shall be attached with a minimum of two pairs of hinges. Each door shall have pulls and catches. Drawers shall have pulls and guides.

c. Options:

1. With or without light fixture. If provided, the compartment shall be equipped with a fluorescent light fixture, meeting or exceeding UL 153. The light fixture shall be mounted underneath the fixed shelf and concealed behind a rail.

2. With hasp locks and brass plates or without hasps and plates.

#### 2.10. Platform Bed (Captains Bed)

a. Description: Single platform bed, with at least 2 under-bed drawers, to accommodate 965 mm (38")W x 2032 mm (80")L mattress, 970 - 1070 mm (38" - 42")W x 2100 - 2160 mm (83" - 85")L x 350 - 590 mm (14" - 23")H. A headboard shall be a part of the bed unit. A minimum 250 mm (10") tall headboard (measured from top of mattress) shall be part of bed unit. The platform portion shall be recessed below the top of the side rails, and foot rails (if no footboard is provided), to keep the mattress in place. The vendor shall be responsible for determining if onsite assembly of the bed is required before delivery

b. Hardware: Includes drawer guides, leveling glides, and drawer pulls. The installed drawer guides shall meet the following test: A complete drawer unit shall be suspended in a bed spring unit with the bottom of the drawer case a minimum of 75 mm from the floor. The drawer shall be opened a minimum 125 mm and a weight of 91 kg shall be slowly applied on the middle of drawer front for one second. Failure to operate smoothly, quietly and without binding after the load is removed shall be cause for rejection.

c. Options:

1. 2 drawers, 4 drawers, or 2 drawers plus 1 extra deep drawer for TA 50 gear.

2. With or without lift-top back storage area under platform.

#### 2.11. Pedestal Desk

a. Description: Desk unit to be free-standing, 1010 - 1220 mm (40" - 48")W x 580 - 640 mm (23" - 25")D x 710 - 770 mm (28" - 30")H. Desk shall have three drawers, one of which being a file drawer. Pedestal shall be minimum of 400 mm (16") wide.

b. Hardware: Includes drawer guides, leveling glides, and drawer pulls.

c. Option: Provide pencil drawer or slide-out keyboard tray

#### 2.12. Study Carrel.

a. Description: Carrel to be attached to Pedestal Desk by concealed fasteners. Carrel width shall be within 50 mm (2") of the width of the desk, and be shall have a minimum height of 550 mm (22"). Carrel to include 2 shelves, tack board and fluorescent task light. The light fixture shall meet or exceed UL 153, and shall be mounted underneath the bottom fixed shelf and concealed behind a rail.

#### 2.13. Microwave Oven Stand

a. Description: Wood unit, 680 - 840 mm (27" - 33")W x 550 - 660 mm (22" - 26")D. The Contractor shall be responsible for verifying the unit is of sufficient size to accommodate the microwave. Provide doors with adjustable shelf below microwave. If microwave is to be located in a compartment, provide adequate ventilation holes and one 38 mm (1-1/2") grommet in back of cabinet.



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- b. Hardware: Includes catches, leveling glides, door pulls, and door hinges.
- 2.14. Wood Headboard with Metal Frame
  - a. Description: Shall accommodate mattress/box spring sets. Headboard shall be 960 – 1070 mm (38" - 42")W for twin size or 1320 - 1430 mm (52" - 56") W for full size. Height of headboard shall be at least 250 mm (10") above top of mattress. Bed frame shall meet or exceed industry standards in types and thickness of materials and construction.
  - b. Hardware: Shall be adequate to attach headboard to frame.
- 2.15. Loft Unit
  - a. Description: Unit shall provide a raised bed conforming to the requirements of paragraph 2.7., with a full-length desk underneath. Options for dressers and/or desk drawers to fit under the desk shall be provided. Desk shall be provided with a carrel or similar arrangement which provides tack board, shelves, and fluorescent task light. Different desk options should be provided, to include a cut out in the desk to create a sort of "U-shaped" desk. Other accessories or options may be provided.
- 2.16. Underbed Drawers, 2 or 4 drawers
  - a. Description: Unit to fit under twin size bed. May be 2 individual drawers on casters, or one unit with 2 drawers. Drawer depth shall be minimum of 60% of the width of the bed.
  - b. Hardware: Consists of drawer pulls and casters on individual drawers or drawer guides on drawers in unit. Capacity of drawers and casters/drawer guides shall be same as for platform bed (para. 2.10).
  - c. Options: 2 drawers or 4 drawers. Two drawer unit may be 2 individual drawers on casters, or one unit with 2 drawers, four drawer unit must be one case with 4 drawers. Two drawer unit must be able to fit under stackable beds as well as a standard metal frame, four drawer unit for use under stackable bed only.
- 2.16A. Underbed Drawers, 3 drawers
  - a. Description: Unit to fit under stackable, twin size bed. Unit must be two cases, one case with two stacked drawers, and one case with one large drawer. Both cases shall be the same height. Drawer depth shall be minimum of 60% of the width of the bed.  
Hardware: Consists of drawer pulls and casters on individual drawers or drawer guides on drawers in unit. Capacity of drawers and casters/drawer guides shall be same as for platform bed (para. 2.10).
- 2.17. Bookcase
  - a. Description: Single free-standing unit, 830 - 940 mm (33" - 37")W x 250 - 330 mm (10" - 13")D. Height depends on option selected
  - b. Options: 3 shelves, 2 of which are adjustable, 860 - 970 mm (34" - 38")H; or 5 shelves, 4 of which are adjustable, 1820 - 1990 mm (72" - 78")H.
- 2.18. Framed Mirror.
  - a. Solid oak frame mirror with concealed security mounting system. 550-660 mm (22" - 26")W x 1010 - 1220 mm (40" - 48") H.



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### CASEGOODS SUMMARY:

The table below summarizes the casegood items described above and includes information about options. "STD" denotes what is considered as the standard for that piece and will be provided unless another option is chosen by the installation.

ITEM:	FEATURES:												
	Dust Shield	Pull type (P1-P4)	Const Type (A, B, C1, C2)	1 dwr	2 dwr	3 dwr	4 dwr	6 dwr	With hasp locks	adj. shelves behind doors	Slide out key-board	Fluor task light	Other (see item desc.)
Nightstand	OPT	OPT	OPT	OPT	STD								
Drop-Lid Desk	OPT	OPT	OPT			STD			OPT			STD	
TV Armoire	OPT	OPT	OPT			STD			OPT	OPT			
Wardrobe		OPT	OPT						OPT				OPT
Upper Unit		OPT	OPT						OPT				
Bachelor Chest	OPT	OPT	OPT			STD							
Small Bachelor Chest	OPT	OPT	OPT			STD							
Stackable Bed													OPT
Chest	OPT	OPT	OPT				OPT	STD					
Computer Desk	OPT	OPT	OPT			STD			OPT		STD	OPT	
Captain's Bed		OPT	OPT		STD	OPT	OPT						OPT
Pedestal Desk		OPT	OPT			STD	OPT				OPT		
Study Carrel			OPT									STD	
Microwave Stand		OPT	OPT							STD			
Loft Unit		OPT	OPT			STD		OPT			OPT	STD	OPT
Underbed drawers, 2 or 4 drawers		OPT	OPT		STD		OPT						
Underbed drawers, 3 drawers		OPT	OPT		STD		OPT						
Bookcase			OPT										OPT

STD = Standard

OPT=Option



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#### 3. TABLES

- a. Description: All items shall meet or exceed the appropriate sections of ANSI/BIFMA X5.5-1989. Occasional tables (coffee table, end table, corner table, etc.) will be provided with 4 legs or panels on both ends. If panels are provided, they may be solid or open in the center. Panels must be connected by a rail for rigidity and durability. Other tables (dining table, game table, etc.) may have 4 legs with connecting aprons, a pedestal base with four prongs, or other appropriate base. The base shall never be less than half the size of the table top to prevent tipping.
- b. Materials and finishes: No fiberboard, particleboard, or hardboard shall be used in any part of the furniture or in any plywood component. All lumber shall be kiln-dried to a moisture content of 5-8%. All internal framing shall be constructed from selected mixed hardwoods. All external frame parts shall be #1 grade oak per AWI 100-S. Styles of tables in any one room should be identical. If this is not possible, the styles must be complimentary. The furniture finish shall be a multi-coat formulation, similar to AWI 1500, system 4 or 5, premium grade for filled grained woods. Wood color to be manufacturer standard natural or light to medium oak.
- c. Tops: Tops shall be minimum of 30 mm (1-3/16") thick, 5-ply hardwood plywood unless otherwise noted in the item descriptions. All exposed edges must be finished with minimum 10 mm (3/8") thick solid oak edge banding. The top surfaces shall be matte-finish, high-pressure plastic laminate, HGS series per AWI 200-G-5 unless otherwise noted in the item descriptions. Laminate color shall match the wood in both species and color. Tabletops may have a 42 - 48 pcf particleboard or 20 kg (45 lb.) MDF core provided that a minimum 19 mm (3/4") hardwood lumber band is provided on all 4 sides. The top must be completely sealed from moisture by use of the laminate, the lumber band, and a backer sheet. The backing sheet used must not be easily separated from the lumber banding. The connection of the top to the rest of the table must be designed so that the table will resist damage from moving the table by the top. Consideration should be given to connecting the legs and panels/aprons to the top in the lumber band. This may be accomplished through blocking located behind the panels/aprons, or by a metal angle that allows the top to be connected to the panels/aprons closer to the edges of the top. In addition, the glue line between the lumber band and the core material should be supported. If the glue line is unsupported and/or the top is not attached in the lumber band, an extended warranty should be considered as warranty term will be a determining factor in the durability of the piece. Pedestal base tables may not be provided with particleboard or MDF tops. If the standard top construction is particleboard or MDF, an option should be available for a hardwood plywood top to meet specific requirements at certain Army installations. Other core materials may be considered provided test results are provided that clearly illustrate that the proposed material has a better screw holding capacity, absorbs less moisture, and provides as good of a surface for attaching the laminate as the particleboard or MDF.
- d. Hardware: Non-skid rust-free steel with nylon leveling glides. Tables at standing height (greater than 810 mm (32")) will be provided with a foot ring.
- e. Fabrication: All tables shall be constructed in accordance with AWI 400, Premium grade, unless otherwise specified. All table frame joints shall be secured with glue and double doweled, unless otherwise specified. Wood dowels shall be multi-grooved and kiln-dried to a moisture content of 5% or less. All frames shall be reinforced with corner blocks, glued and screwed to the frame. The top of the table shall be joined to the frame with screws and glue blocks. If a pedestal base is provided, the base shall have a metal spider plate that bolts to the table top to assure stability. Adhesives used for laminating panels and assembly shall conform to ASTM D-905 average block shear strength of not less than 19 300 kPa (2800 lb. Per square inch) when tested. All exposed edges shall either be eased or rounded.



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f. Item descriptions: The following items are required, within the dimensions noted, to support the Unaccompanied Personnel Housing Furniture and Furnishings Program for the Department of the Army.

3.1. Living Unit Dining Table

a. Description: Wood table, 680 - 840 mm (27" - 33") square or round x 740 - 790 mm (29" - 31")H. Minimum table top thickness for this item is 19 mm (3/4").

3.2. Community Building Table

a. Description: Wood table, 1170 - 1270 mm (46" - 50") diameter or 860 - 970 mm (34" - 38") square x 730 - 790 mm (29" - 31")H.

3.3. End Table

a. Description: Wood table, 560 - 660 mm (22" - 26")W x 560 - 660 mm (22" - 26")D x 530 - 590 mm (21" - 23")H.

b. Options: Solid oak butcher block top or HPL top as specified above.

3.4. Occasional Table

a. Description: Wood table, 990 - 1140 mm (39" - 45")W x 510 - 610 mm (20" - 24")D or 860 - 970 mm (34" - 38") square x 380 - 430 mm (15" - 17")H.

b. Options: Solid oak butcher block top or HPL top as specified above.

3.5. Stand-up Table

a. Description: Wood table, 600 - 770 mm (24" - 30") diameter x 960 - 1070 mm (38" - 42")H, 380 - 560 mm (15" - 22") spread, foot ring.

## 4. SIDE/DESK CHAIRS

a. Description: Side or desk chairs with an approximate maximum foot print of 600 mm x 600 mm (24" x 24") with upholstered seat and back. All side and arm chairs shall meet or exceed the appropriate section of ANSI/BIFMA X5.1. This furniture must meet all requirements of National Fire Protection Association (NFPA) 101.

b. Materials and finishes: All lumber shall be kiln-dried to a moisture content of 5-8%. All internal framing shall be constructed from selected mixed hardwoods. All external frame parts shall be solid oak. No wood imperfections, such as knots, shall be visible. Wood color to be manufacturer standard natural or light to medium oak. All exposed wood frame parts shall receive a multi-coat formulation, similar to AWI 1500, system 4 or 5, premium grade for filled grain woods. Seat cushions shall consist of 2 pcf density 30-36 pounds per 50 square inches in 25% IFD polyurethane foam in accordance with ASTM D3574. Back cushions shall consist of 1 pcf density 14-20 pounds per 50 square inches 25% IFD polyurethane foam in accordance with ASTM D3574. Seat and back cushions shall be fully wrapped with 34.02-42.425 g (1.2-1.5 ounces) per yard garnetted polyester fiber for a smooth appearance.

c. Hardware: Non-skid rust-free steel with nylon glides.

d. Fabrication: All seating frame joints shall be secured with glue and double doweled as a minimum. Wood dowels shall be multi-grooved and kiln-dried to a moisture content of 5% or less. Metal to metal connections shall provide at least the same strength as wood connections with corner blocks glued and screwed to the frame. Adhesive used for assembly shall be polyvinyl acetate (PVA) or aliphatic resin. Adhesive shall be best commercial grade quality. Upholstery construction, including sewing, shall meet or



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exceed the minimum requirements of the Joint Industry Upholstery Fabrics Standards Committee 1992. All other characteristics shall meet or exceed the minimum requirements stated therein, unless otherwise specified. Back and seat cushions shall be removable for removal and replacement of upholstery. Back and seat cushions shall be screwed into the finished frame with four concealed screws per cushion. As a minimum, the upholstery fabric on the seat shall be neatly turned and stapled to the seat bottom.

e. Item descriptions: The following items are required as a minimum, to support the Unaccompanied Personnel Housing Furniture and Furnishings Program for the Department of the Army.

- 4.1. Side Chair with Legs
  - a. Description: Wood frame chair, without arms. Chair shall have 4 legs with an "H" or "U" shaped stretcher.
- 4.2. Side Chair with Sled Base
  - a. Description: Wood frame chair, without arms. Chair shall have a sled base which is provided with lateral support.
- 4.3. Side Chair with 2- or 3- Position Sled Base
  - a. Description: Wood frame chair, without arms. Chair shall have a 2- or 3- position sled base which is provided with lateral support.
- 4.4. Arm Chair with Legs
  - a. Description: Wood frame armchair with 4 legs and "H" or "U" shaped stretcher.
- 4.5. Arm Chair with Sled Base
  - a. Description: Wood frame armchair with a sled base which is provided with lateral support.
- 4.6. Arm Chair with 2- or 3- Position Sled Base
  - a. Description: Wood frame armchair with 2- or 3- position sled base which is provided with lateral support.